



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/481,784   | 01/11/2000  | Matti Floman         | 460-009131-US(PAR)  | 6099             |
| 7590   | 03/18/2004  |                      | EXAMINER            |                  |
| Clarence A Green<br>Perman & Green LLP<br>425 Post Road<br>Fairfield, CT 06430 |             |                      | ANDERSON, MATTHEW D |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2186                |                  |
| DATE MAILED: 03/18/2004  |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/481,784             | FLOMAN ET AL.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Matthew D. Anderson    | 2186                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 20 October 2003.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-7 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 11 January 2000 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_ .
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8</u> . | 6) <input type="checkbox"/> Other: _____ .                                   |

## **DETAILED ACTION**

### *Response to Amendment*

1. In response to the amendment filed 10/20/03:

the specification and abstract have been amended, and the corresponding objections have been withdrawn;

claims 1 and 4 have been amended.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii *et al.* (US Patent # 5,923,829) and Murray, Jr. *et al.* (US Patent # 4,639,858).

4. With respect to claims 1-2 and 4-5, Ishii *et al.* disclose:

refreshing memory cells in a synchronous dynamic memory, wherein the information stored in the memory cells at a given time is divided into information to be maintained and information not requiring maintenance, wherein the memory cells not requiring maintenance remain unrefreshed, wherein the dynamic memory is divided into two or more blocks which can be refreshed independently, by teaching in column 9, line 60 through column 10, lines 6, a case in which only the bank 0 of the SDRAM enters the power-down mode. The bank 0 of the

Art Unit: 2186

SDRAM stores data which should be maintained. For maintaining the stored data, a self-refreshing operation is automatically performed on the bank 0 of the SDRAM . Therefore, the refresh request which is given externally is invalidated. Power required for a refreshing operation through the self-refreshing operation is extremely small in comparison to power required for the refreshing operation through the external refresh request. In contrast to this, bank 1 of the SDRAM, which is not storing data to be maintained, a refreshing operation is not performed in order to reduce power consumption;

information on the location of each application program to be executed is stored as well as on the quantity of memory allocation by each application, and it is determined on the basis of said stored information which of the memory block contain information requiring maintenance, wherein other memory blocks remain unrefreshed, by teaching in column 11, lines 50-67, FIGS. 10 and 11 show examples of timing charts of such a refreshing operation. The refresh control unit 21 previously has information indicating a position at which image information is stored and a time at which the image information is stored at the position. Based on the information, the refresh control unit 21 causes a REFREQ signal to be at a low level for requesting the refreshing operation at a '0'th clock pulse of a clock signal CLK as shown in FIGS. 10 and 11. The adjusting control unit 22 recognizes this level change of the REFREQ signal. The adjusting control unit 22 regularly monitors a state of the SDRAM via the SDRAM control unit 24. Therefore, the adjusting control unit 22 confirms that the SDRAM is in a state in which the SDRAM can accept a request for the refreshing operation after recognizing the level change of the REFREQ signal indicating requesting of the refreshing operation. Further, the adjusting control unit 22 also confirms that there is no other higher-priority request. After the

confirmation has been achieved, the adjusting control unit 22 causes a REFACK signal to be at a low level for permitting the request for the refreshing operation at a '1' st clock pulse of the clock signal CLK as shown in FIGS. 10 and 11.

5. With respect to the independent claims, Ishii *et al.* fail to disclose the dynamic memory storing application program data. Murray, Jr. *et al.* disclose in column 2, lines 35-40, of a dynamic memory that stores software application programs to be executed.

6. It would have been obvious to one of ordinary skill in the art, having the teachings of Ishii *et al.* and Murray, Jr. *et al.* before him at the time the invention was made, to modify the refreshing of image data stored in dynamic memory taught by Ishii *et al.*, to instead refresh program data, as with the dynamic memory refreshing of Murray, Jr. *et al.*, in order prevent intermittent errors in programs stored in memory areas with little activity, as taught by Murray, Jr. *et al.*.

7. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii *et al.*, Murray, Jr. *et al.*, and Stolt *et al.* (US Patent # 5,721,860).

8. With respect to claims 3 and 6, Ishii *et al.* and Murray, Jr. *et al.* teach all other limitations of the parent claims, but fail to specifically disclose the dynamic memory comprising an asynchronous dynamic memory. Stolt *et al.* disclose in column 10, line 28, an asynchronous DRAM (ADRAM) refresh operation.

9. It would have been obvious to one of ordinary skill in the art, having the teachings of Ishii *et al.*, Murray, Jr. *et al.*, and Stolt *et al.* before him at the time the invention was made, to modify the DRAM refresh taught by Ishii *et al.* and Murray, Jr. *et al.*, to be an asynchronous

DRAM as in the DRAM refresh of Stolt *et al.*, to minimize overhead since addresses do not need to be generated, as taught by Stolt *et al.*.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii *et al.*,

Murray, Jr. *et al.*, and Baweja *et al.* (US Patent # 6,212,599).

11. With respect to claims 3 and 6, Ishii *et al.* and Murray, Jr. *et al.* teach all other limitations of the parent claims, but fail to specifically disclose the electronic device to be a communication device comprising mobile station functions. Baweja *et al.* disclose in figure 1, a refreshing system containing a mobile system controller.

12. It would have been obvious to one of ordinary skill in the art, having the teachings of Ishii *et al.*, Murray, Jr. *et al.*, and Baweja *et al.* before him at the time the invention was made, to modify the DRAM refresh taught by Ishii *et al.* and Murray, Jr. *et al.*, to include a mobile system controller, as in the DRAM refresh of Baweja *et al.*, in order to provide a mobile computer system and coupling to a peripheral bus and accompanying PCI components, as taught by Baweja *et al.*.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

Art Unit: 2186

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach similar DRAM refresh systems.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Anderson whose telephone number is (703) 306-5931. The examiner can normally be reached on Monday-Friday, 2nd Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on (703) 305-3821. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Matthew D. Anderson  
March 16, 2004



MATTHEW KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100